**What is claimed is:**

1.    A control method of a voltage source inverter of a PWM system, which includes a power semiconductor device controlling a level of a voltage, a frequency and a phased, the control method comprises the steps of:

5    before operation, storing voltage error information for each polarity of respective phase currents of the inverter; and

during the operation, reading the voltage error information to compensate for a voltage instruction value

10    or a pulse width of a PWM instruction signal, in order to correct a voltage error.

2.    The control method according to claim 1, further comprising the steps of:

15    before the operation,

providing an AC motor with a current voltage instruction to drive the AC motor in a phase where current values of two phases of the power semiconductor device constituting the voltage source inverter are equal and

20    where a current value of the other one phase is 0;

modifying a voltage correction value so that the current values of the two phases are equal or the current value of one phase is 0; and

21

calculating the voltage error information used during the operation based on the modified voltage correction value, to store the voltage error information.

5  3.  The control method according to claim 1, further comprising the steps:

before the operation,

providing an AC motor with a current voltage instruction to drive the AC motor in a phase where current

10  values of two phases of the power semiconductor device constituting the voltage source inverter are equal and where a current value of the other one phase is a total of the current values of the two phases;

modifying a voltage correction value so that the

15  current values of the two phases are equal or two times a current in the other phase flows in one phase; and

calculating the voltage error information used during the operation based on the modified voltage correction value, to store the voltage error information.

20

4.  The control method according to claim 1, further comprising the steps:

before the operation,

providing an AC motor with a current voltage

25  instruction to drive the AC motor in a phase where currents

in respective phases of the power semiconductor device constituting the voltage source inverter fall under a predetermined condition;

modifying a voltage correction value so that current
5    values fall under the predetermined condition; and

calculating the voltage error information used during the operation based on the modified voltage correction value, to store the voltage error information.

10    5.    The control method according to claim 1,

wherein any one of the conditions and methods according to one of claims 2 to 4 is performed multiple times in different phases, and the voltage error information used during the operation is calculated and
15    stored.